SEVERE LOCAL STORMS, DECEMBER 1941

[Compiled by Mary O. Souder]

[The table herewith contains such data as has been received concerning severe local storms that occurred during the month. A revised list of tornadoes will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Libby, Mont., vicinity of	2-3				$1,330	Heavy rain	Damage to roads and bridges.
California, the Bay area and parts of the northern portion. [2]	16	A. m.				Wind and rain	San Francisco escaped damage except that some trees were blown down and basements flooded. In Oakland 2 houses were unroofed letting in sheets of rain on the surprised occupants. At Dunsmuir basements of some business establishments were flooded. Tons of dirt and rock, loosened by rains in widely scattered sections of the State, caused State Scenic Route 28, between Geyserville and Calistoga in Sonoma County, to be closed. State Route 1, the coast road south of San Francisco, was closed temporarily by slides between Rockaway Beach and Half Moon Bay. There were reports of fallen trees and temporary light disruption in some peninsula localities.
Winfield, Kans.	22	2 p. m.	[1] 1		4,000	Hail	Windshields, glass in greenhouses, and electric signs broken; path 2 miles long.
Saunders and Seward Counties, Nebr.	22	7-9 p. m.	[1] 10		2,000	Ice	Loss chiefly to utilities.
Mamou, Morrow, and [2] Goudreau, La., and vicinities.	25	11 a. m.		0	15,000	Tornado and heavy rain.	Storm started in the vicinity of Mamou and ended in Goudreau. 18 homes were leveled and 16 persons injured. Galvanized roofing, pieces of lumber, and household furniture found more than a mile from the scene of the tornado.
Oloh, Miss.	31					Squall	Several houses blown down and timber damaged.

[1] Miles instead of yards.
[2] From press reports.

SOLAR RADIATION AND SUNSPOT DATA FOR DECEMBER 1941

[Solar Radiation Investigations Section, I. F. HAND in charge]

SOLAR RADIATION OBSERVATIONS

BY IOLA PAINE

Measurements of solar radiant energy received at the surface of the earth are made at 9 stations maintained by the Weather Bureau and at 12 cooperating stations maintained by other institutions. The intensity of the total radiation from sun, and sky on a horizontal surface is continuously recorded (from sunrise to sunset) at all these stations by self-registering instruments; pyrheliometric measurements of the intensity of direct solar radiation at normal incidence are made at frequent intervals on clear days at three Weather Bureau stations (Madison, Wis.; Lincoln, Nebr.; and Albuquerque, N. Mex.), and at the Blue Hill Observatory at Harvard University. Occasional observations of sky polarization are taken at the Weather Bureau station at Madison and at Blue Hill Observatory.

The geographic coordinates of the stations, descriptions of the instrumental equipment, station exposures, and methods of observation, together with summaries of the data obtained, up to the end of 1939, are given in the MONTHLY WEATHER REVIEW for December 1937, April 1941, and September 1941.

Table 1 contains the measurements of the intensity of direct solar radiation at normal incidence, with means and their departures from normal (means based on less than 3 values are in parentheses). At Lincoln, Madison, Albuquerque, and Blue Hill the observations are obtained with a recording thermopile, checked by observations with a Smithsonian silver-disk pyrheliometer at Blue Hill. The table also gives vapor pressures at 7:30 a. m. and at 1:30 p. m. (75th meridian time).

Table 2 contains the daily total amounts of radiation received on a horizontal surface from both sun and sky for all stations except Fairbanks, Alaska; and also the weekly means, their departures from normal, and the accumulated departures since the beginning of the year. The values at most of the stations are obtained from the Eppley pyrheliometer recording either on a microammeter or a potentiometer. If the daily figures for total solar and sky radiation at Fairbanks should be desired, they may be obtained approximately 2 months after the date of the observation by writing to the Solar Radiation Investigations Supervisory Station, Blue Hill Observatory, Milton, Mass. Table 2 also includes values of ultraviolet radiation below 3132 Angströms at San Juan (see MO. WEA. REV., Sept. 1941, p. 286).

Radiation at normal incidence was close to normal at all stations during December. Lincoln reports that since the removal of the normal-incidence apparatus from the university experimental station to the downtown office, heavy smoke from nearby chimneys has at times seriously interfered with direct radiation readings.

Total solar and sky radiation received on a horizontal surface during December was above average for all stations for which normals have been computed with the exception of Madison, Lincoln, LaJolla, Blue Hill, Ithaca, and Fairbanks.

The average departure for continental United States in 1941 was +1.7 percent, and for all stations which had complete data for the year and including Alaska was +0.7 percent. Polarization measurements made at Madison on three days gave an average of 75 percent with a maximum of 77 percent on the 18th. Both of these values are above the December normals.